Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of designing a digital filter, including the steps of:

first, determining a real-valued discrete-frequency representation of a desired full length digital filter;

second, transforming said real-valued discrete-frequency representation into a corresponding discrete-time representation;

third, circularly shifting said discrete-time representation; and

fourth, applying a shortening window to said discrete-time representation to produce a zero-padded reduced length filter.

2. (Currently Amended) The method of claim 1, further including the step of circularly shifting said zero-padded reduced length filter to remove leading zeroes.

3. (Previously Presented) The method of claim 1, wherein said real-valued discrete-frequency representation is formed by a noise suppressing spectral subtraction algorithm.

4. (Previously Presented) The method of claim 1, wherein said real-valued discrete-frequency representation is formed by a frequency selective non-linear algorithm for echo cancellation.

5. (Currently Amended) The method of claim 1, wherein said shortening window is a Kaiser window.

6.   (Currently Amended)   The method of claim 1, further including the step of transforming said <u>zero-padded</u> reduced length filter into a minimum phase filter.

7.   (Currently Amended)   A digital convolution method, including the steps of<u>:</u>

<u>first,</u> determining a real-valued discrete-frequency representation of a desired full length digital filter;

<u>second,</u> transforming said <u>real-valued</u> discrete-frequency representation into a corresponding discrete-time representation;

<u>third,</u> circularly shifting said discrete-time representation;

<u>fourth,</u> applying a shortening window to said discrete-time representation to produce a zero-padded reduced length filter; and

<u>fifth,</u> convolving an input signal with said zero-padded reduced length filter.

8.   (Currently Amended)   The method of claim 7, further including the step of circularly shifting said <u>zero-padded</u> reduced length filter to remove leading zeroes.

9.   (Currently Amended)   The method of claims 7, further including the step of transforming said <u>zero-padded</u> reduced length filter into a minimum phase filter.

10.   (Currently Amended)   The method of claim 7, ~~including the step of performing the convolution step in the time domain~~ <u>wherein the step of convolving includes the step of performing a convolution in the time domain</u> using the discrete-time representation of said <u>zero-padded</u> reduced length filter.

11.   (Currently Amended)   The method of claim 7, ~~further including the step of performing the convolution step~~ <u>wherein the step of convolving includes the step of performing a convolution</u> in the frequency domain by using an overlap-add method.

Page 3 of 11

12. (Currently Amended) The method of claim 7, ~~further including the step of performing the convolution step~~ wherein the step of convolving includes the step of performing a convolution in the frequency domain by using an overlap-save method.

13. (Currently Amended) A digital filter design apparatus, including:
means for determining a real-valued discrete-frequency representation of a desired full length digital filter;
means, coupled to the output of said means for determining a real-valued discrete-frequency representation, for transforming said real-valued discrete-frequency representation into a corresponding discrete-time representation;
means, coupled to the output of said means for transforming said real-valued discrete-frequency representation, for circularly shifting said discrete-time representation; and
means, coupled to the output of said means for circularly shifting said discrete-time representation, for applying a shortening window to said discrete-time representation to produce a zero-padded reduced length filter.

14. (Currently Amended) The apparatus of claim 13, further including means for circularly shifting said zero-padded reduced length filter to remove leading zeroes.

15. (Currently Amended) The apparatus of claim 13, wherein ~~said window applying means~~ the shortening window applying means implements a Kaiser window.

16. (Currently Amended) The apparatus of claim 13, further including means for transforming said zero-padded reduced length filter into a minimum phase filter.

17. (Currently Amended) A digital convolution apparatus, including:

Page 4 of 11

means for determining a real-valued discrete-frequency representation of a desired full length digital filter;

means, coupled to the output of said means for determining a real-valued discrete-frequency representation, for transforming said real-valued discrete-frequency representation into a corresponding discrete-time representation;

means, coupled to the output of said means for transforming said real-valued discrete-frequency representation, for circularly shifting said discrete-time representation;

means, coupled to the output of said means for circularly shifting said discrete-time representation, for applying a shortening window to said discrete-time representation to produce a zero-padded reduced length filter; and

means, coupled to the output of said means for applying a shortening window to said discrete-time representation, for convolving an input signal with said zero-padded reduced length filter.

18. (Currently Amended) The apparatus of claim 17, further including means for circularly shifting said zero-padded reduced length filter to remove leading zeroes.

19. (Currently Amended) The apparatus of claims 17, further including means for transforming said zero-padded reduced length filter into a minimum phase filter.

20. (Currently Amended) The apparatus of claim 17, further including means for performing the ~~convolution step~~ convolution in the time domain using the discrete-time representation of said zero-padded reduced length filter.

21. (Currently Amended) The apparatus of claim 17, ~~further including~~ wherein said means for ~~performing the convolution step~~ convolving comprises means

Page 5 of 11

for performing a convolution of said input signal in the frequency domain by using an overlap-add method.

22.   (Currently Amended)   The method of claim 17, ~~further including~~ wherein said means for ~~performing the convolution step~~ convolving comprises means for performing a convolution of said input signal in the frequency domain by using an overlap-save method.

* * *

Page 6 of 11